AFRD ISM Plan

Accelerator and Fusion Research Division
Ernest Orlando Lawrence Berkeley National Laboratory

Accelerator and Fusion Research Division
Integrated Safety Management Plan

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AFRD will conduct all of its operations in a manner that protects the health and safety of employees and the general public and that does not endanger the environment, as defined by the Laboratory's EH&S policies and requirements contained in the Regulations and Procedures Manual (RPM), PUB-3000, and the Berkeley Lab Integrated EH&S Management Plan (ISMS). This Plan has been established to assist in ensuring that the Division's ES&H objectives are met.

Accountability

The Division Director is responsible and accountable for assuring that all AFRD activities are carried out in a safe manner, in accordance with all Laboratory requirements.

The AFRD ES&H Coordinator oversees the Division ES&H program, including review of Activity Hazard Documents (AHDs).

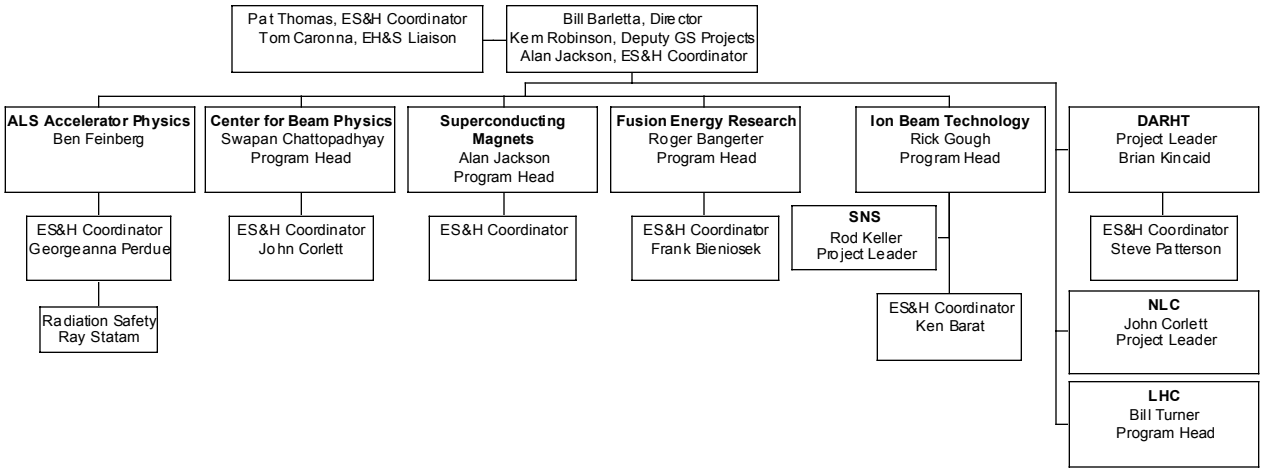
The AFRD ES&H Administrator is responsible for the day-to-day functioning of the ES&H program.

The structure and function of AFRD's safety organization is illustrated in Figure 1 and described in detail in Appendix 3, the QUEST Program Guide. The AFRD ES&H Committee is headed by the Division Director, and includes the Deputy Directors, ES&H Coordinator, ES&H Administrator, Program Heads from each of the designated research programs, the DARHT Project Leader, and Program/Project ES&H Coordinators. The AFRD ES&H Committee discusses ES&H problem areas and suggests improvements to the QUEST self-assessment program. The AFRD ES&H Operations Committee consists of the ES&H Coordinator, ES&H Administrator, and Program/Project ES&H Coordinators. The ES&H Operations Committee discusses ES&H concerns of the programs and projects, lessons learned from them, and information on lab-wide ES&H issues. AFRD ALS accelerator physics group safety issues are coordinated through the ALS Division safety committee. The AFRD ES&H Administrator attends ALS Division safety committee meetings.

The EH&S Liaison is invited to the meetings of the AFRD ES&H Committee and Operations Committee. The EH&S Liaison provides technical support to AFRD operations and coordinates requests for additional EH&S services.

Program Heads and Project Leaders are responsible for establishing, implementing, and maintaining effective QA and ES&H procedures for their Programs/Projects and ensuring correction of ES&H deficiencies on a timely basis.
Each Program Head appoints one or more Program ES&H Coordinators. (NOTE: The LHC Program will appoint an ES&H Coordinator when fabrication and experimental work begins.) In most Programs, this position is a part-time responsibility for a senior researcher or engineer. The DARHT Project Leader has appointed a Project ES&H Coordinator. The ALS Division ES&H Coordinator serves as the ES&H Coordinator for the ALS accelerator physics group.

Figure 1. AFRD's ES&H Organization Structure



The Programs are further divided into Groups concentrating on certain areas of operations and/or research. Each Group is headed by a Group Leader who reports to the Program Head and is responsible for ensuring that work performed by members of the group is conducted in accordance with applicable ES&H programs, procedures, and requirements.

All supervisors (including Principal Investigators) are responsible for ensuring work is planned considering ES&H risks, all assigned personnel are trained in ES&H responsibilities appropriate to the tasks performed, and work is performed in accordance with all applicable ES&H work authorizations and requirements.

All AFRD personnel (including AFRD employees, matrixed employees, visitors, temporary employees, students, and participating guests) are assigned to a QUEST self-assessment team, with the exception of short-term personnel. Persons whose participation in work activities at AFRD are anticipated to occur over a period of less than 90 days may be included in QUEST team as determined by the Program Head. ALS accelerator physics personnel are assigned to ALS Division QUEST Circles. Each QUEST team has charge of self-assessment for the workspace of it members.

All AFRD personnel (employees, contractors, and participating guests) are responsible for stopping any work activity considered an imminent danger, defined in Section 1.5 of Pub-3000 as any condition or practice that could reasonably be expected to cause death or serious injury, or environmental harm.

Contractors

Program Heads, Project Managers, and supervisors (including Principal Investigators) take responsibility for the safety of contracted work by assuring qualified contractors are selected, hazards are identified, and work is performed safely.

AFRD contractor oversight will comply with the requirements of the ISMS. In accordance with Chapter 10 of PUB-3000, the safety rights and obligations of contract employees are the same as those of LBNL employees. AFRD supervisors assigned to direct the work of contract employees must provide instruction, safety equipment, and conditions equivalent to those provided to LBNL employees.

Construction work must be authorized by LBNL Facilities. The safety and health of construction subcontractor employees is the responsibility of the construction subcontractor.

Matrixed Personnel

Technical and administrative personnel from other Divisions are matrixed to AFRD, and AFRD personnel are matrixed to other Divisions. Matrixed personnel are managed in accordance with the Berkeley Lab Matrix Protocols (Figure 2). The Protocols replace the Memorandums of Understanding previously established between Divisions.

Matrix customers, Home division supervisors, and matrixed employees talk to each other about job hazards and ES&H training requirements for the work to be done in the matrix assignment.

It is the responsibility of the originating or approving engineer to ensure that design documents are processed in accordance with Engineering Division safety procedures.

The Home Division is responsible to ensure that its employees are knowledgeable, and trained, as necessary, in the basic environment, safety and health policies and procedures of the Laboratory. Matrix customer supervisors may request specific or unique training for Matrix personnel assigned to their unit, and may provide on-the-job ES&H training specific to the assignment. Home division supervisors identify and develop appropriate training plans for matrixed personnel, including ensuring the matrixed employee's ES&H Training Profile requires training appropriate to the hazards of his/her current assignment. The Job Hazard Questionnaire or ES&H Training Profile for employees who are matrixed to or from AFRD must be signed by the employee, the Matrix division supervisor, and the Home division supervisor. The Matrix division supports matrixed employee ES&H training efforts through direct and indirect funding as established on an annual basis. The Home division is responsible for ensuring that ES&H training needs are met.
The Matrix customer supervisor assigns the day to day work of the matrix employee and responds to assignment-related questions. For personnel matrixed to AFRD, AFRD is responsible for leadership in the ES&H aspects of day-to-day activities specific to the assignment. The Matrix customer refers matrixed employees to their Home division supervisor to address issues that are not directly related to the day to day tasks of the matrix assignment. The Matrix customer and Home division supervisors stay appropriately informed of and sensitive to employee issues that may be covered by collective bargaining agreements. The Home division supervisor stays in regular communication with both the Matrix customer supervisor and the matrixed employee.

Throughout the assignment, the Matrix customer and Home division supervisor talk to each other about the employee's job performance. The Matrix customer supervisor provides timely information on performance problems to the Home division supervisor. The Home division supervisor requests the primary customer supervisor to complete the expectation section of P2R. The primary Matrix customer supervisor provides comments on performance expectations and submits them to the Home division supervisor. The Home division provides the P2R to the matrix customer for review, discussion, and comment. The employee prepares the Employee Worksheet and provides a copy to both the Matrix customer and the Home Supervisor. The Home division supervisor determines the final P2R rating. When the Home division supervisor has completed the P2R, the Matrix customer supervisor initials it, acknowledging having read the P2R. The Home division supervisor reviews the P2R with the employee. The employee addresses questions or issues related to the P2R to the Home division supervisor.

The Matrix customer and Home division supervisor discuss corrective actions for performance issues relative to the matrix assignment. Performance issues or corrective actions that may be taken relative to matters outside the scope of the matrix assignment, e.g., conduct, may be discussed with Matrix customers on a need to know basis, e.g., when action taken affects delivery of service to the customer. The Home division determines and implements any disciplinary action or counseling needed. The matrixed employee interacts with the Home division management on issues related to corrective actions.

Figure 2. Draft Berkeley Lab Matrix Protocols 5/11/99

	[C] Matrix customer	[H] Home Supervisor	[E] Employee
Staffing	**[C1]** Matrix customer and Home division supervisor discuss work to be done and manpower/staffing levels, as well as movement of employees on and off assignments.	**[H1]** Matrix customer and Home division supervisor discuss work to be done and manpower/staffing levels, as well as movement of employees on and off assignments. **[H2]** Home division determines approach to meeting staffing needs, e.g., recruitment or reassignment. Matrix customers may participate in interview(s) of final candidate(s). Home division determines position description, classification and salary (ongoing).	**[E1]**
Performance	**[C2]** Throughout the assignment, the Matrix customer and Home division supervisor talk to each other about the employee's job performance. The Matrix customer shall provide timely information on performance problems to the Home division supervisor. Primary matrix customer'(s) must complete expectation section of P2R and submit to home supervisor. The primary matrix customer reads the P2R and signs or initials.	**[H3]** Throughout the assignment, the Matrix customer and Home division supervisor talk to each other about the employee's job performance. Home supervisor requests primary customer to complete the expectation section of P2R. **[H4]** The home division provides the P2R to the matrix customer for review, discussion, and comment. Matrix customer will initial P2R acknowledging having read the P2R. The home supervisor determines the final P2R rating. Home division determines who will sit in the P2R discussions with employee.	**[E2]** The employee prepares the Employee Worksheet and provid a copy to both the Matrix custom and the Home Supervisor. The employee addresses questions or issues related to the P2R to the Home division supervisor.
Corrective Actions	**[C3]** The Matrix customer and Home division supervisor discuss corrective actions for performance issues relative to the matrix assignment. Corrective actions that may be taken relative to matters outside the scope of the matrix assignment may be discussed with Matrix customers on a need to know basis, e.g., when action taken affects delivery of service to the customer.	**[H5]** The Matrix customer and Home division supervisor discuss corrective actions for performance issues relative to the matrix assignment. Performance issues or corrective actions that may be taken relative to matters outside the scope of the matrix assignment, e.g., conduct, may be discussed with Matrix customers on a need to know basis, e.g., when action taken affects delivery of service to the customer. **[H6]** Home division determines and implements any disciplinary action or counseling needed.	**[E3]** Employee interacts with li management (Home division) on issues related to corrective actio
Training	**[C4]** Matrix customer and Home division supervisor talk to each other about training requirements for the work to be done in the matrix assignment. Matrix customer may request specific or unique training for Matrix personnel assigned to their unit.	**[H7]** Matrix customer and Home division supervisor talk to each other about training requirements for the work to be done in the matrix assignment. **[H8]** Home division identifies/develops appropriate training plans to meet current and anticipated institutional and job specific resource requirements. Matrix divisions support these efforts through direct and indirect funding as established on an annual basis. The Home division is responsible for ensuring that EH&S training needs are met.	**[E4]** Employee discusses performance planning and development with Home division supervisor.

Day to Day	**[C5]** The Matrix customer assigns the day to day work of the matrix employee and responds to assignment-related questions. **[C6]** Matrix customer refers employee to Home division supervisor to address issues that are not directly related to the day to day tasks of the matrix assignment. The Matrix customer stays appropriately informed of and sensitive to employee issues that may be covered by collective bargaining agreements.	**[H9]** The Home division supervisor stays in regular communication with both the Matrix customer and the employee. The Home division supervisor stays appropriately informed of and sensitive to employee issues that may be covered by collective bargaining agreements.	**[E5]** The employee is the prima resource that delivers, collaborates, communicates and contributes a variety of services facilitate the scientific endeavor of the Laboratory.

Heavy-Ion Fusion Virtual National Laboratory Safety Plan

Lawrence Livermore National Laboratory (LLNL), Princeton Plasma Physics Laboratory (PPPL), and Lawrence Berkeley National Laboratory (LBNL) are jointly engaged in Heavy Ion Fusion (HIF) research, with the goal of Inertial Fusion Energy based on heavy-ion induction accelerators as drivers. The staff of the three laboratories carries out this research in a coordinated manner, as a Virtual National Laboratory (VNL). The terms of this coordination are outlined in a Memorandum of Agreement between the Laboratory directors. An Oversight Board governs the HIF VNL. The HIF VNL program director is the AFRD Fusion Energy Research Program Head. The Fusion Energy Research Program Safety Coordinator is the HIF VNL Safety Coordinator for work at LBNL. The Deputy LLNL Team Leader is the HIF VNL Safety Coordinator for work at LLNL. The VNL Deputy Director representing PPNL is the HIF VNL Safety Coordinator for work at PPPL.

As part of this coordinated research effort, many HIF VNL staff members spend a fraction of their time at the three laboratories, and use the facilities of the three laboratories at least occasionally. Some staff members are principally sited at LBNL, and spend only a small fraction of their time onsite at LLNL or PPPL.

The general principle to be followed by HIF VNL staff in all activities is to follow the operational procedures associated with the workplace where they are working at any given time. Integrated Safety Management principles are to be followed by HIF VNL staff wherever they are working, and by all personnel working at LLNL, PPPL, or LBNL. Office work at all three sites is to be carried out in a safe, responsible manner, with due regard to ergonomic safety considerations. Staff members are to be kept aware that their workplace environment will be adapted to meet their needs in this regard. (AFRD will provide ergonomic evaluations for HIF VNL personnel at LBNL in response to requests.)

Any safety concerns by HIF VNL personnel while working at LBNL, LLNL, or PPPL are to be communicated to the Fusion Energy Research Program Safety Coordinator, the LLNL HIF VNL Deputy Director or Deputy Team Leader, and the PPPL HIF VNL Deputy Director.

Work at LLNL

Section 1.5.2 of the LLNL ES&H Manual requires Non-LLNL Personnel to have a sponsoring or supervising organization, except as covered by the terms of a contract. The authorizing organization is to ensure that these individuals have or receive ES&H training for the hazards associated with the work in the work area and the same pre-placement and ongoing medical surveillance examinations as those provided to LLNL employees. Individuals who have not had ES&H training must be escorted and directly supervised by personnel knowledgeable in the hazards for the area.

Non-LLNL personnel working at LLNL are responsible for:

- Reporting all work-related injuries and illnesses to their supervisor or LLNL point of contact;
- Using the same protective equipment and safety controls required for any other employee working in the area;
- Following LLNL requirements governing the safe and orderly conduct of operations;

- Only performing work that has been authorized;
- Not performing duties that may expose them to hazards beyond those to which their co-workers are exposed; and
- Following activity/facility specific work control processes.

All experimental work at LLNL is to follow the Operational Safety Procedures (OSP) associated with the particular laboratory in which the work is taking place. These OSPs are the responsibility of the LLNL HIF experiments leader and the managers of the individual labs.

LLNL Health Services provides emergency first aid to all individuals on site.

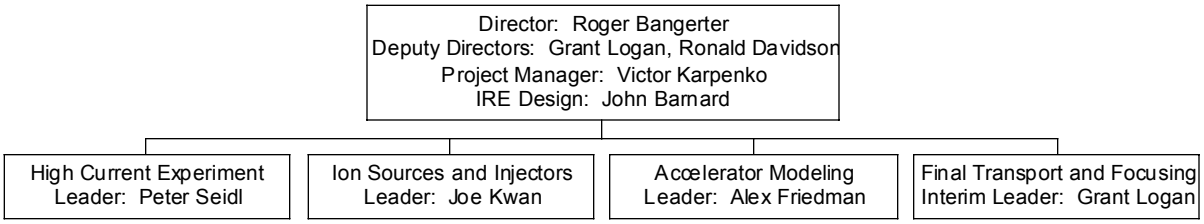
Work at LBNL

LBNL and AFRD requirements, including PUB-3000 and the AFRD ISM Plan, govern all work at LBNL. Work procedures and authorizations are established for specific activities. Every person performing work at LBNL must be familiar with and implement applicable LBNL safety standards. Section 1.3.2 of PUB-3000 describes responsibilities for all personnel working at LBNL. These responsibilities include taking the initiative to seek assistance or advice as needed to carry out operations safely.

Work at PPPL

HIF VNL personnel working at PPPL must comply with the requirements described in the PPPL Visitor Guide (http://www.pppl.gov/guide/), including completion of General Employee Training.

Figure 3. HIF VNL Organization
(DRAFT 01/05/2000)



Scope of Work

The scope of AFRD research activities is defined by the Mission Statement of our Division Charter: "The Accelerator and Fusion Research Division is broadly charged with conducting basic and applied research and development in all areas pertaining to the physics and technology of beams. In addition, it operates major LBNL facilities that exploit accelerated beams for use in basic and technological research." Divisional activities encompass the conception, design, construction, and operation of accelerators and storage rings for scientific and technological research, for fusion-energy experimentation, and for industrial and medical applications, as well as the development of superconducting magnets, beamlines, and other components for use in such machines. Current AFRD operations include particle accelerators, superconducting magnets, lasers, laboratories, machine shops, fabrication areas, warehouse space, and office spaces.

Some AFRD personnel conduct work at the Advanced Light Source, 88-Inch Accelerator, and other LBNL facilities. AFRD personnel may also work on the University of California campus and at other off-site locations. Personnel from other organizations, including visitors, guests, and students, work at AFRD facilities.

The hazards associated with operations at LBNL are described in the Integrated Hazard Assessment database.

Operations and Work Authorization

Division, Program, and Project managers and supervisors (including Principal Investigators) are responsible for considering ES&H hazards, risks, and concerns during the work planning process and appropriate controls are determined prior to authorizing work. AFRD work authorization procedures are tailored to the level of hazard of the work. General duties are authorized by the employee job descriptions and by completion of training requirements determined by the supervisor. Work recognized as posing special hazards is planned and authorized as described in Chapter 6 of PUB 3000, the ISMS, Section 1.3 of the Operating and Assurance Plan, and AFRD and Program/Project procedures. Work authorization methods commonly utilized for AFRD operations are described below.

Field Work Proposal/Agreements (FWP/As), Work For Others requests (WFOs), Cooperative Research and Development Agreements (CRADAs), and Laboratory Directed Research and Development (LDRD) documents are carefully reviewed for compliance with environment, health, and safety concerns. The conceptual design process includes documented involvement of applicable EH&S Division personnel in the review of performance and regulatory requirements, codes and standards, and ES&H criteria.

Major projects (according to DOE classification criteria) undergo a formal Operational Readiness Review (ORR) or Accelerator Readiness Review (ARR) under DOE direction. Smaller projects undergo an internal readiness review and work authorization process performed by program and division management as described below.

Experimental hazards are assessed in accordance with PUB-3000, Chapter 6, EH&S Documentation and Approvals. The Integrated Hazards Assessment (IHA) data is one of the resources available to the division for defining its authorized scope of work and for identifying the hazards associated with its work activities.

For experiments or facilities that require an Activity Hazard Document (AHD), the AHD is reviewed and signed by the Division Director, AFRD ES&H Coordinator, Principal Investigator or Activity Supervisor, and EH&S Division representatives.

Work requiring a Radiation Work Authorization, Sealed Source Authorization, or other ES&H permit or authorization will be performed in accordance with the authorization issued by the EH&S Division.

The AFRD ES&H Administrator also serves as the Division Space Coordinator. This combination of duties provides additional opportunities for participation in the work planning process, to ensure facilities provided are appropriate to the work to be performed in the space. Space coordination activities require the ES&H Administrator to visit work areas frequently, providing opportunities to observe work in progress and assist in identifying potential hazards.

AFRD personnel working off-site are required, at a minimum, to comply with the ES&H requirements applicable to the site at which they are working. The Principal Investigator/Activity Supervisor is responsible for assigned personnel working off-site, including the obligation to stop work immediately if they encounter or discover any work-related activities constituting an imminent danger.

Qualification

AFRD selects, assigns, and retains personnel in accordance with the RPM and AFRD procedures. In selecting from a group of applicants, the division director, program head, or project leader evaluates the applicants' qualifications and selects the person who possesses the qualifications to perform the duties of the position most effectively. In making this judgment, the division director, program head, or project leader compares the knowledge, skills, abilities, and other qualifications of the applicants with those required for successful performance of the duties of the position. AFRD contractor selection will comply with the requirements the RPM and ISMS. Effective and successful performance of duties includes performance in a manner that protects the health and safety of employees and the general public and that does not endanger the environment, as defined by the Laboratory's EH&S policies and requirements contained in the RPM, PUB-3000, ISMS, and OAP.

Training

Each AFRD supervisor is responsible for ensuring all assigned AFRD employees, students, visitors, and guests whose anticipated assignment with AFRD exceeds three months have completed an ES&H Training Profile within the first month of work. Whenever an employee's job assignment changes the ES&H Training Profile is reviewed to ensure that the required training is appropriate to the employee's job hazards, program assignments, and safety roles. Annually, in conjunction with the Performance Review process, the ES&H Training Profile and the employee's completion of required training is reviewed, and a training plan is developed for each employee for the next twelve-month period.

Work authorizations, such as Activity Hazard Documents and Sealed Source Authorizations, specify training requirements for authorized personnel. The AFRD ES&H Administrator ensures EH&S training courses required by AFRD work authorizations are included in the Training Profiles of authorized personnel. The training records of authorized personnel are reviewed for completion of required EH&S courses prior to approval, modification, and renewal of work authorizations. The Principal Investigator or

Activity Supervisor designated by the work authorization is responsible for ensuring authorized personnel have completed required training, including on-the-job training in activity-specific procedures, before being allowed to work without direct supervision.

Training of matrixed employees is managed in accordance with Berkeley Lab Matrix Protocols.

Funding of EH&S Requirements

Principal Investigators incorporate appropriate resource allocation for ES&H concerns in all research proposals, including cost of safety equipment, permits, training, maintenance, waste disposal, and facilities modifications unless covered by institutional funding sources.

Resources

To facilitate implementation and execution of the Division ES&H Program, the following Division resources are made available:

0.20 FTE Division ES&H Coordinator
1.00 FTE Division ES&H Administrator

The AFRD ES&H Administrator's duties include providing approximately .12 FTE support to the ALS Division ES&H Coordinator, who acts as ES&H Coordinator for the ALS accelerator physics group. The AFRD ES&H Administrator also provides approximately .02 FTE to the Nuclear Sciences Division ES&H Coordinator.

ES&H efforts are integral part of all AFRD activities and are performed by all AFRD personnel as needed and appropriate to the job task. The estimated level of effort is anticipated to include, but is not limited to:

$\geq$ 4 hr/Program or Project/month Program or Project ES&H/QA Coordinator duties
$\geq$ 1.5 hr/employee/month QUEST-II self-assessment team

AFRD will require support from EH&S Division professionals on an as-needed basis. EH&S estimates that direct support activities may require a level of effort of approximately .47 FTE, as described in Appendix 1, Estimated EHS Support of AFRD. AFRD also expects to receive EH&S general programmatic support as described in PUB 3000, including but not limited to EH&S training courses.

Validation, Feedback, and Improvement

AFRD's primary method of assessing and validating the effective implementation of this Plan is our self-assessment process, described in detail in Appendix 1, the QUEST Program Guide. Our self-assessment process is evaluated annually and findings are summarized in the annual AFRD Self-Assessment Report. Performance measurement criteria for this report are described in Appendix 2. All walkthrough and QUEST action items not completed within 60 days are placed on the LSAD database. LSAD completion status, trends, and root causes are summarized in the AFRD Self-Assessment Report.

Additional opportunities for improvement will be identified through LBNL self-assessment activities, as described in PUB-5344, ES&H Self-Assessment Program, including Integrated Functional Appraisals, Integrated Hazard Assessments, Safety Review Committee MESH reviews, and Appendix F performance reports. If any discrepancies between authorization information provided by EH&S and records maintained by AFRD are noted, these discrepancies will be discussed with the appropriate EH&S personnel and the relevant documents will be corrected or clarified as necessary. DOE, UC, and ES&H regulatory agency oversight activities may identify necessary improvements. Applicable information from the LBNL Lessons Learned program will be disseminated by the ES&H Administrator as another means to share information for accident prevention and hazard awareness.

This Plan will be reviewed and updated annually, and may be revised more frequently as needed to facilitate compliance with regulatory and contract requirements and enhance the effectiveness of the Plan.

Accelerator and Fusion Research Division
Environment, Safety & Health Management Plan

Review and Approval

Signatures:

Submitted by:

signature on file — *April 5, 2000*
William A. Barletta, Director — date signed
Accelerator and Fusion Research Division

EH&S Resource Commitment:

signature on file — *April 19, 2000*
David C. McGraw, Director — date signed
Environment, Safety & Health Division

Accepted:

signature on file — *May 18, 2000*
Charles V. Shank, Director — date signed
E. O. Lawrence Berkeley National Laboratory

APPENDIX 1
Estimated EHS Support of AFRD
From the EH&S Division

Function	**FTE**
Division Liaison Function	
Liaison -- AHD Reviews	.05
Liaison -- Inspections (IFA, SA, etc.)	.10
Liaison -- Consultations, meetings, etc.	.05
	.20
Other EH&S Support	
Electrical safety	.02
IH Hazard evaluations (includes chemical issues, respirators, lead, noise, confined space, air quality, project support)	.10
Emergency coordination and management	.03
ORPS	.05
Waste -- Training, consultations	.05
	.25
Total	**.45**

Note: EH&S support of ALS is included in the ALS Division ISM Plan.

APPENDIX 2. AFRD FY 2000 Self-Assessment Performance Measures

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
1. Define Work • Division integrates ES&H into work and activities. • Line Management is responsible for the protection of the public, the workers, and the environment. • Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels. • Resources are effectively allocated to balance programmatic, operational, and ES&H considerations.	1A. Division Director and Line Management communicates ES&H expectations, goals, & policies to staff. Examples of appropriate communications include: • Annual all-hands division meeting • Research procedures and protocols include safety notes • Availability of safety committee minutes.	1.A.1 Division Director sends annual safety memo to all Division employees. 1.A.2 AFRD ES&H Operations Committee meetings are held every month. Division management and each Program* is represented at each meeting. The Division ES&H Plan and its implementation status are discussed at these meetings. 1.A.3 AFRD ES&H Committee meetings are held quarterly. Division management and each Program* is represented at each meeting. The Division ES&H Plan and its implementation status are discussed at these meetings. 1.A.4 Each Program* holds meetings at which safety is discussed. 1.A.5 AFRD ISM Plan is posted on AFRD website. * NOTE: DARHT Project is considered a Program for the purposes of these Performance Measures.	1.A.1 Copy of safety memo maintained in Division Office. 1.A.2 Copy of meeting agendas and attendance sheets maintained in Division Office. 1.A.3 Copy of meeting agendas and attendance sheets maintained in Division Office. 1.A.4 Copies of Program meeting agendas and attendance sheets maintained in Program Office. 1.A.5 Website address.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
	1B. Division holds employees, guests, and visitors accountable for ES&H.	1.B.1 AFRD supervisors review ES&H performance of employees and comment on performance of matrixed employees as part of the P2R process. 1.B.2 AFRD will develop a personnel safety responsibilities review system for long-term (>90 day) personnel who do not receive a yearly performance appraisal.	1.B.1 P2R instructions sent to supervisors by General Sciences Human Resources center. 1.B.2 Review system documentation in Division Office.
	1C. Division has an approved and validated ISM Plan.	1.C.1 The Division has an approved ISM Plan in place. 1.C.2 The Division ISM Plan is reviewed at least annually and updated as necessary.	1.C.1/1.C.2 Copy of signed and dated ISM Plan maintained in Division Office.
	1D. Adequate funds and resources are allocated for controls of EH&S hazards.	1.D.1 ES&H funding and resources are included in project proposals. 1.D.2 No projects are delayed due to inadequate planning for ES&H requirements. 1.D.3 Division or Program funding constraints does not impede LSAD completion.	1.D.1 Copies of project proposals maintained in Division budget office. 1.D.2 Identify exceptions in Division Self-Assessment Report. 1.D.3 Identify exceptions in Division Self-Assessment Report.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
2. Identify Hazards • Line Management evaluate work (new and modifications) to identify hazards before work is performed and to establish authorization for performing work safely. • Line Management systematically evaluates hazards to mitigate risk posed by work in their area.	2A. Line managers use Chapter 6 of PUB 3000 or equivalent for evaluating hazards and necessary authorizations for doing work safely.	2.A.1 Principal Investigators or designated project participants will complete AHDs or Hazard Assessment Guide Tables for new experimental activities and modifications to experiments, which add new hazards or increase the level of hazards. Program ES&H Coordinator provides a copy to the Division ES&H Administrator. 2.A.2 Hazards inventory for all AFRD workspaces is reviewed and updated annually.	2.A.1 Copies of AHDs and Hazard Assessment Guide Tables maintained in Division Office. AHDs and Hazard Assessment Guide Tables maintained in Program Office and/or at work site. 2.A.2 Hazards information maintained in LBNL database.
	2B. Based on the hazards identified, the appropriate authorizations have been issued (note: covers all experiments and projects including non-AHD activities).	2.B.1 For all projects requiring AHDs, Division review and approval will be obtained before project start-up. The Division will review AHDs for active projects annually or when changes in hazards or controls are anticipated. 2.B.2 Current Sealed Source Authorizations will be maintained for all projects requiring SSAs. 2.B.3 Non-experimental work will be authorized by identification of hazards in the annual hazards inventory update and identification of appropriate training in Training Profiles.	2.B.1 Current AHDs are on file in the Division Office and posted at the work area for all projects requiring AHDs. 2.B.2 Current Sealed Source Authorizations are on file in the Division Office and maintained at the work area for all projects requiring SSAs. 2.B.3 Training Profiles and hazards inventory information maintained on LBNL databases.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
	2C. Division maintains an inventory of its hazardous chemicals.	2.C.1 Principal Investigator/ Activity Supervisor will ensure any new types of hazardous chemicals requiring EH&S authorization are identified prior to use. 2.C.2 Division ES&H Administrator will request annual inventory update by EH&S.	2.C.1 AHDs, HAGTs, and SSAs are on file in the Division Office and posted at the work areas. 2.C.2 Chemical inventory information maintained on LBNL database.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
3. Control Hazards ● Administrative and engineering controls tailored to the hazards have been implemented.	3A. Certification of engineering controls and safety instrumentation are up to date.	3.A.1 Line Management ensures equipment under their control is checked, serviced, calibrated and/or certified as required by PUB-3000, work procedures and manufacturers' recommendations. 3.A.2 Where applicable, QUEST teams check engineering controls, safety instrumentation, and counterfeit parts in their areas at least annually.	3.A.1 Documentation of equipment inspection and servicing maintained in Program Office or at work site. 3.A.2 QUEST team assessment records/meeting notes maintained in Program Office.
	3B. Signage and postings are appropriate for the work and associated hazards, including emergencies.	3.B.1 QUEST teams review signage and posting in their areas at least annually. 3.B.2 Line Managers ensure signage and postings required by their work authorizations are maintained.	3.B.1 QUEST team assessment records/meeting minutes maintained in Program Office. 3.B.2 Walkthrough records maintained in Division Office.
	3C. Line managers ensure that ergonomic issues are effectively addressed for their work stations and/or work processes.	3.C.1 Line managers request ergonomic evaluations for personnel with ergonomic concerns. 3.C.2 Line management provides funding for ergonomic equipment identified in ergonomic evaluations.	3.C Copies of ergonomic evaluations maintained in Division Office. 3.C.2 Purchase requisitions maintained in Division or Program offices; worksite verification.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
4. Perform Work • Work is consistently performed within authorization. • Work is conducted in manner that protects the worker, the public, and the environment. • Line Management ensures that staff possesses proficiency and knowledge commensurate with conducting their assigned work safely.	4A. Line Management ensures that their work is performed within authorization, safely, and in a manner that protects the environment.	4.A.1 Hazardous waste generators assigned custodianship of Satellite Accumulation Areas (SAAs) maintain them in accordance with Guidelines for Generators, PUB-3092. Generators maintain control of SAAs, check SAAs at least monthly, categorize and label wastes properly, and request pick-up by EH&S before accumulation time limits are exceeded. 4.A.2 Supervisors identify hazards and take actions necessary to reduce the rate of accidents and occurrences. All personnel report accidents and occurrences as required by PUB-3000.	4.A.1 % compliance for SAAs determined by EH&S inspection; %QA waste samples and number of NCARs reported by EH&S waste management. 4.A.1 Accident reports (SARs) maintained by EH&S and in Division Office. Accident statistics reported by EH&S. Occurrence Reports maintained by EH&S and in Division Office.
	4B Training records document that required training for staff is current.	4.B.1 Division ES&H Administrator reviews training needs with Programs at AFRD ES&H Operations Committee meetings. 4.B.2 Supervisors review Training Profiles and training records with employees during P2R period and when duties change significantly.	4.B Training profiles and completion rates maintained in LBNL database. 4.B.1 Meeting minutes maintained in Division office. 4.B.2 Copies of signed JHQs or Training Profiles maintained in General Sciences Human Resources Office.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
	4.C Site and task specific training under authorizations (Division, RWA, SSA, AHD) is current.	4.C.1 Division and Principal Investigator/Activity Supervisor review training records of personnel when reviewing authorizations. 4.C.2 Supervisors ensure on-the-job training specified in authorizations is completed and documented.	4.C.1 Training profiles maintained in Division Office authorization files. 4.C.2 Training records for on-the-job training maintained at work site.
	4D. Line managers ensure that Building Emergency Team members are fully trained to perform their responsibilities during and emergency.	4.D.1 Division ES&H Administrator establishes Training Groups for Building Emergency Teams and reviews training needs with Programs at AFRD ES&H Operations Committee meetings. 4.D.2 Supervisors review Training Profiles and training records with employees during P2R period and when assigned to Building Emergency Team.	4.D Training profiles and completion rates maintained in LBNL database. 4.D.1 Meeting minutes maintained in Division office. 4.D.2 Copies of signed JHQs or Training Profiles maintained in General Sciences Human Resources Office.
	4E. Stewardship: waste minimization performance goals are met or exceeded (data provided by EH&S).	4.E.1 Division distributes waste minimization performance information received from EH&S at Division safety meetings. Generators identify and implement appropriate waste minimization efforts.	4.E.1 Waste minimization performance information (% reduction of hazardous waste and non-hazardous solid waste) maintained by EH&S.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
5. Feedback and Improvement • Line Management actively participates in corrective action planning and ensures that plans are effectively executed. • Divisions implement improvements based on feedback from self-assessment, lessons, learned, benchmarking, Appendix F and other vehicles that promote continuous improvement.	5A. To ensure hazards are mitigated, line managers and staff do: • Walk Throughs (No formal data needed. Response will be verified during OAA validation) • Participate in S/A (Document S/A team membership)	5.A.1 Division Director performs at least one walkthrough of selected AFRD spaces annually. 5.A.2 Division ES&H Administrator walks through all AFRD workspaces at least annually with appropriate Program ES&H Coordinator. 5.A.3 All AFRD personnel (except short-term) participate in QUEST activities.	5.A.1 Walkthrough records maintained in Division office. 5.A.2 % Division workspace inspected documented in Walkthrough records maintained in Division Office. 5.A.3 QUEST team rosters, assessment records/meeting notes maintained in Program Offices. Division Safety Committee meeting notes discussing QUEST activities.
	5B. Division tracks the corrective actions of findings identified in its self-assessment.	5.B.1 Each Program tracks QUEST action items within first 30-days after discovery and reports unresolved items to Division. 5.B.2 Division tracks findings and corrective actions on Division spreadsheet Division places action items not completed within 60 days on LSAD database.	5.B.1 Program QUEST assessment records/meeting minutes maintained in Program Offices. 5.B.2 AFRD Action Item spreadsheet and LSAD database maintained in Division Office.

FY 2000 Self-Assessment Performance Criteria	**Lab Expectations** (for annual SA Report)	**AFRD Actions** (to implement expectations)	**Evidence** (for OAA validation)
	5C Division ES&H committee reviews ES&H data and reports (e.g. lessons learned, SAARs, incident reports, EH&S monitoring reports, Appendix F performance measures, etc.) and institutes appropriate mitigation measures or opportunities for improvement.	5.D.1 Division ES&H Administrator reviews ES&H information, and discusses significant events and trends at Division safety meetings.	5.D.1 Division safety meeting agendas and minutes maintained in Division Office.

APPENDIX 3

AFRD QUEST PROGRAM GUIDE

Accelerator and Fusion Research Division
Ernest Orlando Lawrence Berkeley National Laboratory

HOW TO USE THIS GUIDE

Most of the pages of this Guide comprise forms and checklists to assist you in your **QUEST** activities. If you read Section 1 thoroughly, and, when needed, the short text at the beginning of each of the other sections describing the forms contained therein, you'll understand **QUEST**. All AFRD personnel are strongly encouraged to do this. For your use, here is a description of each of the sections of this Guide:

Section 1. **QUEST** Description

Please read this section carefully. It contains important information as to the basic requirements and flexibility given to Programs and Projects in setting-up **QUEST** teams and implementing **QUEST** activities.

Section 2. Team Roster

A current roster of Team members must be maintained in the Program or Project office. Establishing a team name and listing it as described in this section will help identify **QUEST** teams within your Program or Project.

Section 3. ES&H/QA Concerns

Any concern about employee safety and health, the protection of the environment, or conditions that affect the quality of AFRD activities should be listed as described in this section and handled in accordance with guidance contained in Sections 1 and 3.

Section 4. ES&H Checklists

This section contains model self-assessment checklists. Instructions for use are contained within the section. All AFRD space must be inspected at least once each year for applicable items on the **QUEST** Fundamentals checklist. The other checklists are provided as a tool that assessment teams may use to assist in performing inspections. ES&H Coordinators and Team Leaders are encouraged to tailor the optional checklists to the hazards that may be found in your work areas.

Section 5. Quality Assurance/Quality Improvement

This section contains guidance for providing input on quality assurance issues to the AFRD QA Operations Committee.

SECTION 1. QUEST DESCRIPTION

INTRODUCTION

QUEST is an integrated way to examine **QU**ality Assurance/Improvement and **E**nvironment, Safety, and Health through **S**elf-Assessment and **T**eamwork. Its basic premise is that teams composed of employees actually performing the work of the Programs are in the best position to evaluate the quality and safety of their workplace.

HISTORY

- **QUEST** was developed in 1994
- It was revised as QUEST-II in 1996.
- The April 1998 update aligned the **QUEST** program with the Lab Integrated Safety Management System by incorporating **QUEST** into the AFRD ES&H Management Plan.
- The October 1998 update provided greater flexibility to teams in deciding how to implement **QUEST**.
- The January 2000 update establishes an annual QUEST review as the required minimum level of QUEST participation and revises the Quality Assurance aspects of self-assessment.
- AFRD management will review the **QUEST** program annually as part of our Integrated Safety Management Plan update.

OBJECTIVES

The main objective of **QUEST** is the identification and mitigation of any condition or process that jeopardizes the safety and health of employees, protection of the environment, or the quality of AFRD research or operations. The QUEST process involves all long-term AFRD personnel to raise awareness of ES&H and quality issues and develop the habit of identifying, reporting, and resolving potential problems before accidents or occurrences result. **QUEST** teams are also encouraged to identify opportunities for improvement, examine each of these opportunities, and implement those actions that they believe will lead to the improvement desired.

PROCESS

Required Activities:

All AFRD personnel (including Division employees, matrixed employees, visitors, temporary employees, students, and participating guests) are assigned to a QUEST self-assessment team, with the exception of short-term personnel (persons whose participation in AFRD work activities at LBNL are anticipated to occur over a period of less than 90 days/year). Persons whose participation in work activities at AFRD are anticipated to occur over a period of less than 90 days may be included in a QUEST team as determined by the Program Head. Composition of the teams is left to the discretion of the appropriate Program Head or Project Leader, but each team should have charge of self-assessment for the workspace of its members.

Program/Project ES&H Coordinators must coordinate team assignments to ensure the annual inspections cover all the Program/Project space at LBNL. Teams may work together or exchange areas.

Each QUEST team is required to perform an assessment of workplace ES&H hazards at least once each year. The Team Leader may select a subset of team members to perform the actual workplace inspection and report the findings to the team.

The applicable items on the QUEST Fundamentals checklist must be checked. (NOTE: ALS may designate different checklists for ALS assessments.) The additional checklists from Section 4 of this Guide are provided as tools teams may use when conducting inspections. Team members are also encouraged to identify quality assurance issues. The annual inspection must be completed before the end of the designated QUEST inspection month. The inspection may take place before the designated QUEST month to accommodate the work schedules of team members.

Each team must meet at least once each year to discuss the workplace inspection findings and solicit additional reports of concerns from its members. Teams must report any unresolved concerns to their Program/Project ES&H Coordinator.

The Program/Project ES&H Coordinator must reported the unresolved concerns before or during the AFRD ES&H Operations Committee meeting immediately following the designated QUEST inspection month. The AFRD ES&H/QA Administrator will enter ES&H action items past 60 days into the Laboratory's Self-Assessment Database (LSAD) and track them to completion. QA action items will be forwarded to the AFRD QA Operations Committee.

Program Heads and Project Leaders may establish additional requirements for QUEST activities within their Project or Program.

AFRD ALS accelerator physics personnel are assigned to ALS Division Safety Circles, which function as the ALS QUEST teams. They will participate in ALS Division QUEST activities, as directed by the ALS ES&H Coordinator. ALS may designate different requirements for AFRD's ALS accelerator physics personnel.

Recommended Activities:

In addition to the required annual inspection, QUEST teams are encouraged to remain active throughout the year. QUEST teams can play an important role in assisting personnel in identifying and solving problems. Team meetings are one way of providing feedback to the team on the actions that have been taken as a result of the concerns team members have identified. QUEST team meetings are also an opportunity to pass along relevant information from the AFRD ES&H and QA committees. Most QUEST teams find value in meeting 4-6 times a year. Appropriate meeting topics include any issue affecting safety, the environment, or quality assurance. Teams are encouraged to choose topics that are "local issues" and fit their needs.

Teams may choose to perform additional assessments of particular areas or aspects of their work. If deficiencies are uncovered, corrections should be made immediately when practical. Section 4 or this guide includes an example of a form for recording all deficiencies found and corrections made. Items requiring the assistance of other LBNL organizations to correct, or for which additional guidance is needed should be promptly referred to the AFRD ES&H/QA Administrator through the Program/Project ES&H Coordinator.

TEAM STRUCTURE

Teams may comprise those with similar job descriptions, those who work in a given area, those who work together on specific projects, or any other selection criteria deemed appropriate by the Program.

Each QUEST team must have a team leader. The team leader may be appointed by Program management or elected by the team members. Although team leader rotation is not mandatory, AFRD strongly encourages election of the team leader by the team members for a fixed term. Frequent rotation of team leaders provides a slightly different direction to the team at each rotation and increases each employee's awareness of the many facets of quality assurance, ES&H, and self-assessment by giving them a leadership role for a short time.

Every team member is encouraged to attend all scheduled QUEST meetings. Each team member should have an active role to play in some facet of QUEST activities each year,

e.g., writing a quality assurance policy or procedure, recording team activities, participating in self-assessment inspections, etc..

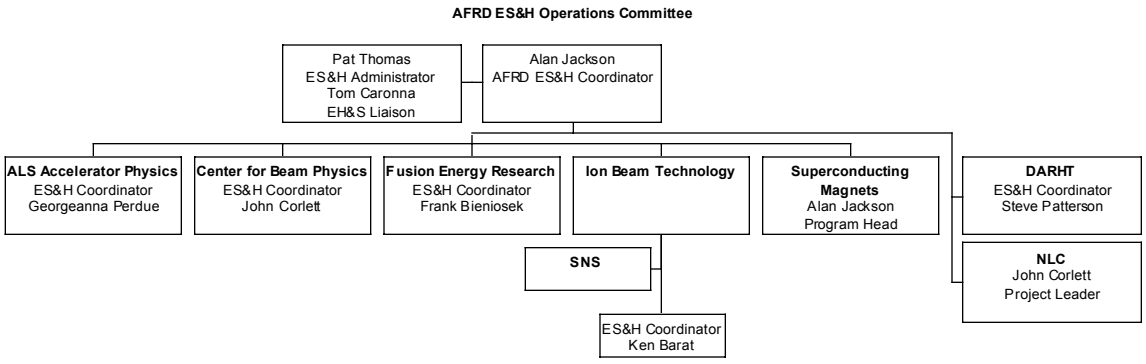
RECORDS

Each QUEST team will maintain a record of its activities including minutes and attendance rosters for all meetings, copies of inspection/correction lists, and a final report of actions taken or planned. The team leader will provide copies of these documents to the Program or Project ES&H Coordinator. As an agenda item on each AFRD ES&H Operations Committee meeting, items considered by the Program or Project to be significant will be discussed. Quality assurance issues will be forwarded to the AFRD QA Operations Committee. Copies of all documents will be maintained in the Program or Project office to provide validation for our annual Division self-assessment report.

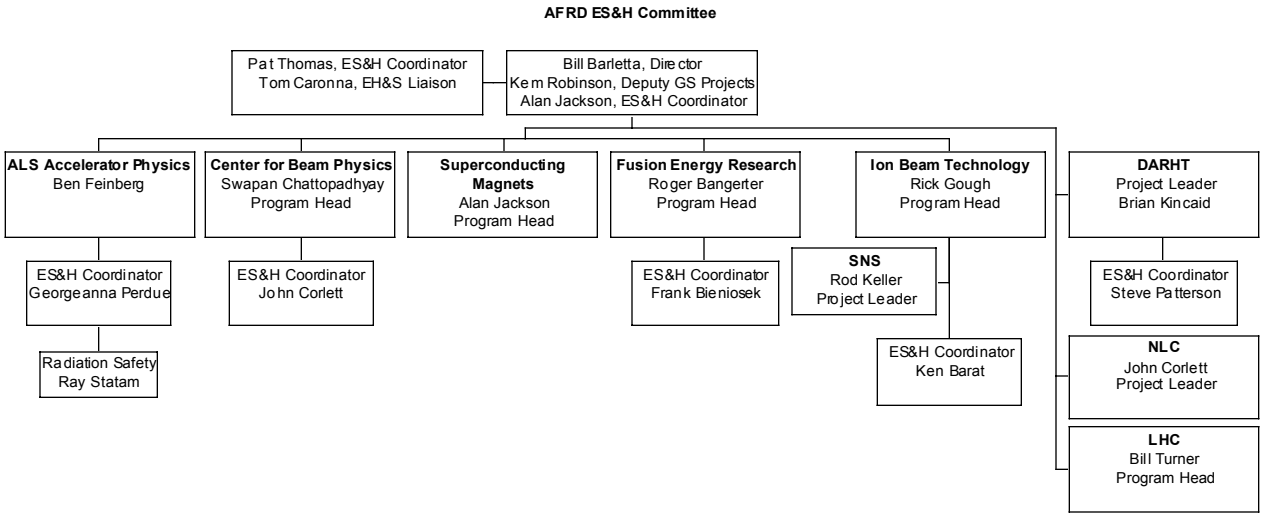
AFRD ES&H and QA COMMITTEES

AFRD ES&H Committees

The AFRD ES&H Operations Committee consists of the Program and major Project ES&H Coordinators, the AFRD ES&H Administrator, and the AFRD ES&H Coordinator. This committee, working in conjunction with Program/Project ES&H Committees and QUEST teams, is the primary conduit for ES&H information both to and from LBNL and AFRD management. The EH&S Liaison is also invited to the meetings of this committee. Meetings are held monthly, usually on the first Friday of the month. At the meeting, Program/Project representatives discuss ES&H concerns and lessons learned from them. The AFRD ES&H Coordinator and/or Administrator will pass on any information on lab-wide ES&H programs and problems that have arisen.



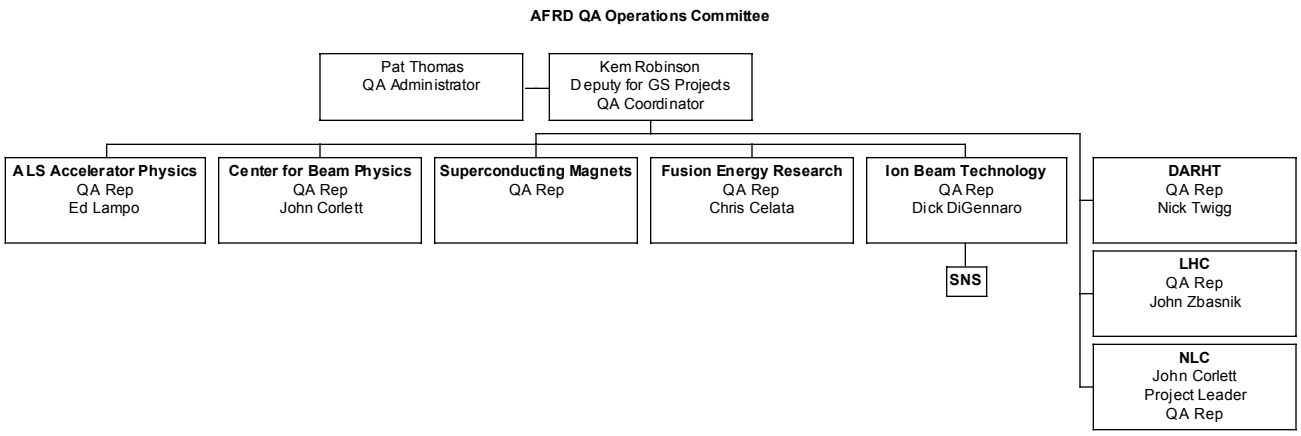
The AFRD ES&H Committee is chaired by the AFRD Director and consists of AFRD Program Heads and Project Leaders for major projects, AFRD Program and Project ES&H Coordinators, the AFRD Deputy, and the AFRD ES&H Administrator. (NOTE: The LHC Project has only two people at this time, and will not be an active participant until fabrication and experimental work begins.) This committee will meet once during every quarter to discuss ES&H problem areas and to suggest improvements to the **QUEST**. The meeting will normally take place in conjunction with a regularly scheduled Program Heads meeting.



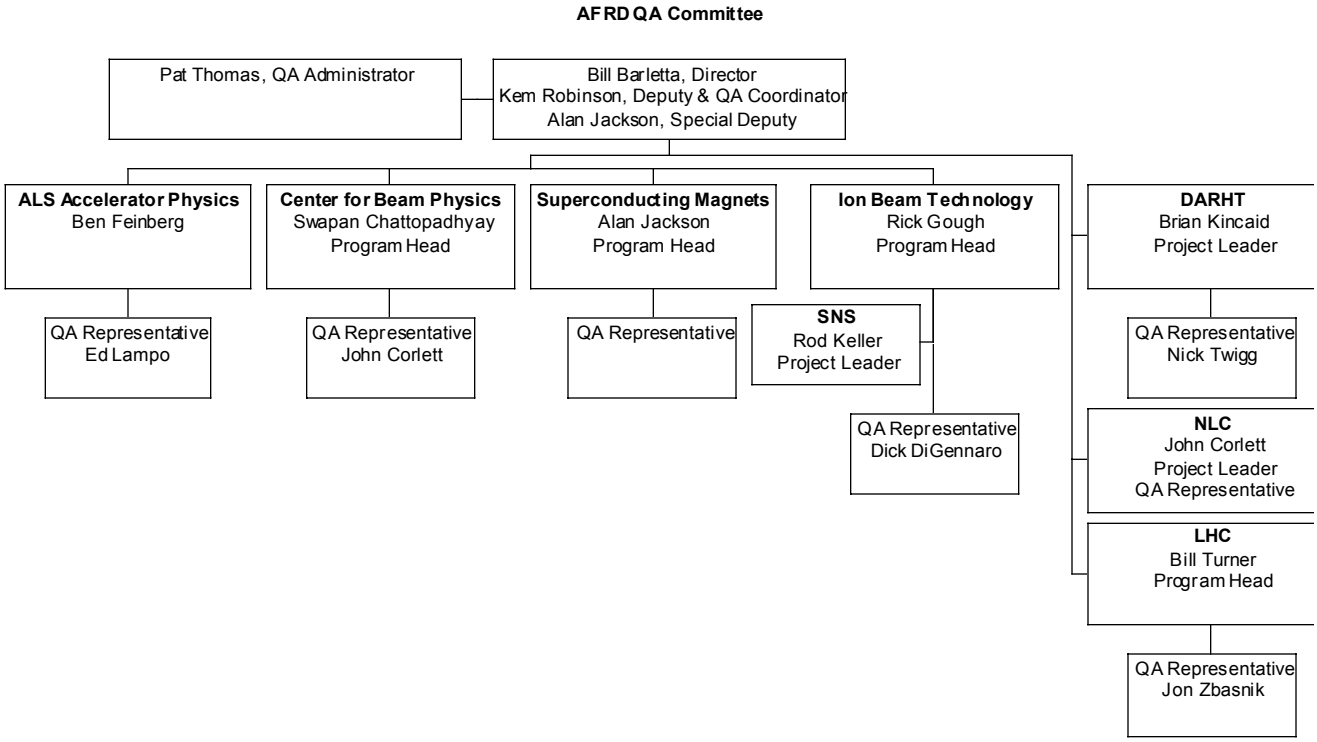
Program or major Project ES&H Committees consist of current **QUEST** team leaders, the Program or Project ES&H Coordinator, and others designated by the Program Head. Program ES&H Committees meet at the discretion of the AFRD Program Head or Project Leader. It is recommended that they meet at least once every two months. ES&H Committee meetings may be held in conjunction with another Program or Project meeting.

AFRD QA Committees

The AFRD QA Operations Committee consists of the Program and major Project QA Representatives, the AFRD QA Administrator, and the AFRD QA Coordinator. This committee, working in conjunction with Program/Project QUEST teams, is the primary conduit for QA information both to and from LBNL and AFRD management. The OAA QA manager is also invited to the meetings of this committee. Meetings are held monthly, usually on the first Wednesday of the month. At the meeting, Program/Project representatives discuss QA concerns and lessons learned from them. The AFRD QA Coordinator and/or Administrator will pass on any information on lab-wide QA programs and problems that have arisen.



The AFRD QA Committee is chaired by the AFRD Director and consists of AFRD Program Heads and Project Leaders for major projects, AFRD Program and Project QA Representatives, the AFRD Deputy/QA Coordinator, and the AFRD QA Administrator. This committee will meet once during every quarter to discuss QA problem areas and to suggest improvements to the **QUEST**. The meeting will normally take place in conjunction with a regularly scheduled Program Heads meeting.



QUEST ROLE IN DIVISION SELF-ASSESSMENT

The Laboratory has implemented a self-assessment system that AFRD fully supports and in which the Division actively participates. This system includes the following assessments:

- Management Environment, Safety, and Health (MESH) assessments, conducted every three years by the senior research personnel on the Safety Review Committee, review how well the management systems described in our AFRD ES&H Management Plan are functioning.
- Integrated Functional Appraisals (IFA), performed every three years by teams of EH&S Division specialists who make comprehensive inspections of AFRD operations based on identified risk levels.
- Division Self-Assessments, performed annually by each Division, measure the implementation of the Division ES&H Management Plans.

QUEST is an important part of this system. Instead of waiting for an EH&S or Safety Review Committee self-assessment team to inspect our areas before we take action, we constantly assess the quality and safety of the locations where we work. After all, who is more familiar with our work and the hazards we face than we are? Assessment of Division spaces for day-to-day deficiencies (in both the ES&H and QA areas), and correction of these deficiencies, is accomplished by **QUEST** teams. Identifying and resolving easily correctable deficiencies within the Division permits Integrated Functional Appraisal teams to direct more of their attention to helping us improve our performance in less obvious areas. To avoid duplicated effort, the IFA teams review our **QUEST** action items as part of their appraisal and then focus their inspections on the more difficult to identify deficiencies.

The annual Division Self-Assessment report is compiled (by the AFRD ES&H Administrator) by reviewing **QUEST** documentation, findings from safety walkthroughs by Division and Program management, and other performance information such as accident reports, regulatory agency inspection reports, and findings of EH&S Division and Safety Review Committee assessments. This report is submitted to the Division Director and the Office of Assessment and Assurance. Findings and performance ratings are rolled up in an LBNL ES&H self-assessment report. Your **QUEST** findings help us identify ways of improving our ES&H/QA efforts.

LBNL FY 2000 ES&H Performance Expectations for Divisions

Expectation	Data/Result	Rating
evidence of strong ES&H communication	yes/no	satisfactory – green partial – yellow marginal - red
evidence of ES&H accountability for employees, guests & visitors	yes/no	satisfactory – green partial – yellow marginal - red
ISM plan is reviewed and updated	yes/no	yes – green no - red
evidence resources and funds allocated to address ES&H issues	yes/no	satisfactory – green partial – yellow marginal - red
% work with hazard reviews	documented reviews / total number of PIs, supervisors, programs, or units	>85% satisfactory >60% <85% partial <60% marginal
% authorized work being reviewed within past 12 months	documented reviews / total number of RWAs, AHDs, or other authorized work	>85% satisfactory >60% <85% partial <60% marginal
chemical inventory updated within past 12 months	yes/no	satisfactory – green partial – yellow marginal - red
% engineering controls certified/tested (i.e., fume hoods, biocabinets, gloveboxes)	units certified or tested / total biocabinets, gloveboxes, fume hoods	>85% satisfactory >60% <85% partial <60% marginal
% monitors calibrated or serviced	monitors calibrated or serviced / total monitors	>85% satisfactory >60% <85% partial <60% marginal
signage & posting updated within past 12 months	yes/no	satisfactory – green partial – yellow marginal - red
evidence of an effective ergonomics program	yes/no	satisfactory – green partial – yellow marginal - red
% authorized work w/o major deficiencies	RWAs, AHDs, etc, without major deficiencies / total RWAs, AHDs, or other authorized work	*regulatory driven* >90% satisfactory >75% <90% partial <75% marginal
% SAAs in compliance	SAAs without deficiencies / total SAAs	*regulatory driven* >90% satisfactory >75% <90% partial <75% marginal
% QA failure rate	% waste samples analyzed that fail	*regulatory driven* below Lab avg. - satisfactory <5% above Lab avg. - partial >5% above Lab avg. - marginal
# NCARs	number of NCARs	*regulatory driven* 0 – green >1 - red
number of ORPS occurrences	number of ORPS occurrences	below 3-yr avg – green at 3 yr avg – yellow above 3 yr avg. - red
Injuries and accidents data	number of DOE reportables	>20% below DOE avg – green <20% below DOE avg – yellow above DOE avg - red

Expectation	Data/Result	Rating
% completion rate of required courses	rates from training database	>85% satisfactory >60% <85% partial <60% marginal
% completion or emergency response training	rates from training database	>85% satisfactory >60% <85% partial <60% marginal
% wastes reduction	reductions from waste database	any reduction – green 5% increase – yellow > 5% increase - red
% work space inspected	inspection of space / total space	>85% satisfactory >60% <85% partial <60% marginal
evidence of management walkthroughs	yes/no	satisfactory – green partial – yellow marginal - red
LSAD completion rate	completed LSADs / total LSADs	>85% satisfactory >60% <85% partial <60% marginal
evidence of active safety management group or safety committee	meeting minutes, issue resolutions	satisfactory – green partial – yellow marginal - red

SECTION 2. TEAM ROSTER

The current team rosters must be maintained in the Program or Project office.

The form on the following page can be used to list the members of your team and record their attendance at the two meetings required in each rotation period. As an alternative, Programs may develop equivalent forms.

While not a requirement, it is helpful for each of the teams that are the heart of the **QUEST** program to have an identity. If you wish, you may select a name for your team.

QUEST Team Roster

Program/Project:_____

Team Name (optional):_____

Team Leader:_____

Assessment Area(s):_____

Employee Name	**Employee ID #**

SECTION 3. ES&H/QA CONCERNS

One of the primary purposes of **QUEST** is to ensure that any concern you have about your safety or health, the health or safety of your co-workers, protection of the environment, or quality assurance in your work area is brought to the attention of management.

The forms that follows (or equivalent forms) are used by **QUEST** team members to submit concerns to their Team Leader.

The first form, the ES&H Concerns Report, is designed for use during **QUEST** inspections or by team members to report concerns noticed in the work place at any time.

The second form, the **QUEST** Meeting Report is designed for recording team meetings.

Some teams have find it useful to post a list in an easy-to-find location, such as a bulletin board in the work area, and encourage team members to add concerns they notice in the course of their daily work. The third form, the **QUEST** Action Item List, may be used for this purpose. This technique is particularly useful for teams whose schedules make it difficult to get everyone together for regular meetings.

Prompt resolution of these issues will improve our safety, efficiency, and compliance with requirements. If a concern cannot be addressed without assistance from others, the Team Leader should immediately forward the concern to the Program or Project ES&H Coordinator or Quality Assurance Representative. At the end of each 30-day period, the reporting forms will be submitted to your Program or Project ES&H Coordinator for discussion at the next AFRD ES&H Operations Committee meeting. (If Quality concerns have been noted, the Program/Project ES&H Coordinator should provide a copy of the form to your Quality Assurance Representative, if this is another person. Quality issues will be discussed at the next AFRD QA Operations Committee meeting).

All ES&H/QA action items reported to the AFRD ES&H/QA Administrator will be tracked on AFRD's action item spreadsheet. Only ES&H items that have not been resolved within 60 days will be entered into LSAD, the Laboratory's Self-Assessment Database, for tracking.

We want to hear from you!

AFRD QUEST Team
ES&H/QA Concern Report

Please submit completed forms to Program/Project ES&H Coordinator

Date Found:_____
Name(s) of Finder(s)*:_____
Program/Project:_____

Concern:

Location: Bldg:_____ Room and/or Area:_____

Description:

Status:
___ Resolved (date)_____
___ Will be resolved by this team, or
___ Referred to ES&H Coordinator, or
___ Referred to QA Representative, or
___ Referred to _____

Concern:

Location: Bldg:_____ Room and/or Area:_____

Description:

Status:
___ Resolved (date)_____
___ Will be resolved by this team, or
___ Referred to ES&H Coordinator, or
___ Referred to QA Representative, or
___ Referred to _____

QUEST Meeting Report
Please submit copy of completed forms to Program/Project ES&H Coordinator

AFRD
QUality **E**S&H **S**elf-Assessment
Teamwork

Team Leader_____
Program/Project:_____
Date:_____

QA/ES&H Topic(s) of Discussion:

Items of ES&H/QA Concern:

1._____
_____
Resolved Immediately ☐ **or** (DATE)_____
Will be Resolved by this team ☐ **or**
Referred to ES&H Coordinator ☐ **or**
Referred to QA Representative ☐ **or**
☐ Referred to:_____

2._____
_____
Resolved Immediately ☐ **or** (DATE)_____
Will be Resolved by this team ☐ **or**
Referred to ES&H Coordinator ☐ **or**
Referred to QA Representative ☐ **or**
☐ Referred to:_____

3._____
_____
Resolved Immediately ☐ **or**
Will be Resolved by this team ☐ **or**
Referred to ES&H Coordinator ☐ **or**
Referred to QA Representative ☐ **or**
☐ Referred to:_____ **or**

Attendance (please print)

QUEST ACTION ITEMS

DEFICIENCY	FOUND BY	DATE	CORRECTED BY	DATE

_____ _____

Submitted by (team name) Date

SECTION 4. ES&H CHECKLISTS

USING THE CHECKLISTS

The applicable items listed on the QUEST Fundamentals Checklist must be reviewed for all work areas at least once a year. This checklist covers items we have promised Lab Management we will check as part of our AFRD Integrated Safety Management Plan.

Additional checklists are provided as optional tools. **QUEST** teams may use these checklists to help them identify safety concerns. These checklists are particularly useful to team members who are doing **QUEST** inspections for the first time.

Any concerns involving checklist items should be listed on the ES&H/QA Concerns Report form included in Section 3 of this Guide.

QUEST FUNDAMENTALS SELF-ASSESSMENT CHECKLIST
REQUIRED

_____

SIGNS AND POSTED INFORMATION

Are emergency telephone numbers posted where they can be readily found in case of emergency?

_____

Space occupants must know the location of the assembly area(s) and evacuation route(s).

_____

Are building and trailer identification numbers posted on exterior? Are room numbers readily visible?

_____

Are hazard warning signs and tags used where there are immediate dangers or potential hazards? Are caution and information signs used where there are potential hazards or need for general instructions? Are obsolete signs promptly removed?

_____

Are portable metal ladders legibly marked with signs reading "CAUTION - Do Not Use Around Electrical Equipment" or equivalent wording?

_____

Are warning signs posted where employees, other than qualified employees, might come in contact with live parts?

_____

Are drains labeled with signs indicating that hazardous materials should not be poured down the drain?

_____

Are "Eye Hazard Areas" marked?

_____

Are signs concerning exiting from buildings, room capacities, floor loading, exposures to x-ray, microwave, or other harmful radiation or substances posted where appropriate?

_____

Do exit signs contain the word "EXIT" in lettering at least 6 inches high, with the stroke of the lettering at least 3/4 inch wide? Are the signs and exits adequately illuminated?

_____
_____

Are signs posted, when appropriate, showing the elevated surface load capacity? Are loads on elevated surfaces within posted load capacity?

_____
_____

Are laser warning signs in place, both on the laser and at entrances to the controlled area?

_____
_____

SUSPECT/COUNTERFEIT PARTS

Are certified high-strength fasteners installed in critical applications marked or identifiable? Are copies of the certification papers available on site?

_____

Are suspect parts being removed, packaged, labeled, delivered to Warehouse 903, and documented following the instructions in the Office of Assessment and Assurance Suspect/Counterfeit Parts Report form?

_____

Have all suspect parts (including high strength fasteners and circuit breakers) been removed from parts stocks?

_____

Is the use of suspect high-strength fasteners in critical applications avoided? If not removed immediately, have they been marked (use red if colored marking) or are they identifiable to indicate that they are to be removed as soon as possible?

_____

ENGINEERING CONTROLS AND SAFETY INSTRUMENTATION

Is preventive maintenance performed efficiently and within prescribed time limits?

_____

Has the performance of each hood or local exhaust ventilation point been checked within the last 2 years as indicated by an EH&S inspection label on the hood?

_____

Are radiation meters (including x-ray monitors and neutron detectors) installed where required?

_____

Are fail-safe interlocks at radiation-generating devices tested for proper operation?

_____

Are the doors to rooms containing Class IV lasers interlocked to prevent personnel from entering the room when the laser is in operation? Has the interlock been checked within the past 12 months?

_____

GENERAL WORK ENVIRONMENT SELF-ASSESSMENT CHECKLIST
OPTIONAL

_____

ASBESTOS EXPOSURE

Are cement materials that contain asbestos (e.g., transite panels) in good condition?

_____

Is asbestos-containing thermal insulation on plumbing equipment, steam pipes, etc. in good condition (i.e., all exposed surfaces, including ends, are sealed)? **NOTE: Report punctures and deteriorating insulation to the Industrial Hygiene Group**

_____

ELEVATED SURFACES

Are all elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch toe boards?

_____

Is a permanent means of access and egress provided to elevated storage and work surfaces?

_____

Is material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?

_____

ENERGY CONSERVATION

Are there loose windows, non-closing doors, holes in outside walls, and other building deficiencies, which result in excess use of energy?

_____

Is inefficient use of energy caused by heating large areas when spot heating would be sufficient, lighting unoccupied areas, etc., avoided?

_____

Where space heating is inadequate, have all work areas (fixed and occupied) been provided with spot heating?

_____

FLOOR AND WALL OPENINGS

Are all floor holes into which persons can accidentally walk guarded either by a standard railing with a standard toe board on all exposed sides or by a floor hole cover that is hinged in place?

_____

Are floor and stairway openings guarded by a cover, a guardrail, or equivalent on all sides (except at entrance to stairways or ladders)?

_____
_____

Are toe boards installed around the edges of permanent floor openings where persons may pass below the opening?

_____
_____

Is every open-sided floor or platform 4 feet or more above the adjacent floor or ground level guarded by a standard railing on all open sides except where there is an entrance to a ramp, stairway, or fixed ladder?

_____
_____

IDENTIFICATION OF PIPING SYSTEMS

Are pipelines carrying hazardous substances identified by tags; are the tags constructed of durable materials, the message carried clearly and permanently distinguishable; and are tags installed at each valve or outlet?

_____
_____

LADDERS

Are all ladders maintained in good condition, joints between steps and side rails tight, all hardware and fittings securely attached and movable parts operating freely without binding or undue play?

_____
_____

Are ladder rungs and steps free of grease and oil and are non-slip safety feet provided on each ladder?

_____
_____

Are only approved ladders or step stools in use?

_____
_____

Is it required that the base of portable rung or cleat type ladders be placed so that slipping will not occur? If conditions do not permit proper placement, is the ladder lashed or otherwise held in place?

_____
_____

LEAD EXPOSURE

If painted lead objects (excluding material used for shielding) are present in the work place, has the Industrial Hygiene Unit evaluated the airborne lead levels?

_____
_____

MACHINE GUARDING AND SAFETY

Are fan blades protected with a guard having openings no larger than 1/2 inch, when operating within 7 feet of the floor or working level?

_____

MATERIAL HANDLING

Are Material Safety Data Sheets available to employees who handle or may be exposed to hazardous substances?

_____

Are materials stored above 6 feet in height secured or contained so that individual articles cannot fall?

_____

Are storage racks internally braced and secured to prevent tipping?

_____

Do employees always wear gloves and safety glasses or protective goggles while handling metal banding?

_____

LIFTING/LOADING

Are tote box loads less than 50 lbs.? Are heavily loaded tote boxes labeled to indicate excess weight?

_____

OCCUPATIONAL NOISE

Has the Industrial Hygiene Unit been contacted to arrange for noise monitoring if background noise makes it impossible to conduct a normal conversation without shouting?

_____

SEISMIC AND GENERAL WORK ENVIRONMENT

Are adequate labels present to prevent food or beverages from being stored in laboratory and shop refrigerators or cabinets used for chemical storage?

_____

Are all worksites, restrooms, and washrooms clean and orderly and in a sanitary condition?

_____

Are bookcases, lockers, file cabinets, furniture, and equipment over three feet high secured against falling during an earthquake? Do storage cabinets and file cabinets have securely closing doors or drawers?

_____

Are ceiling panels, overhead light fixtures, and other overhead objects properly secured? Are wall bulletin boards, chalk boards, framed pictures, and window blinds properly secured?

_____
_____

In areas where means of egress could be blocked, are books and other heavy objects prevented from falling off high shelves (lips on bookcase shelves or bungee cords)?

_____
_____

Is storage of heavy items on shelves, tops of bookcases or tops of file cabinets above 3 feet avoided?

_____

Are standard stair rails or handrails on all stairways having four or more risers?

_____

Are steps on stairs and stairways designed or provided with a surface that renders them slip resistant?

_____

Where stairs or stairways exit directly into any area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic?

_____

Are aisles and passageways kept clear and free of tripping hazards?

_____

Are wet surfaces covered with non-slip materials?

_____

OFFICE SELF-ASSESSMENT CHECKLIST
OPTIONAL

_____

ASBESTOS EXPOSURE

Are floor tiles in good condition, and not being abraded or scraped as a result of work practices (floor buffing, scraping chairs, machinery vibration, etc.)?

_____

BUSINESS SERVICES

Are retirees and students assigned shared office space?

_____

Is all sensitive (attractive) and capital property accurately accounted for?

_____

SEISMIC AND GENERAL WORK ENVIRONMENT

Is a finger guard installed on tabletop paper cutter?

_____

WASTE DISCHARGES

Are drains labeled with signs indicating that hazardous materials should not be poured down the drain?

_____

WORKSTATION ERGONOMICS

Is the worker experiencing any discomfort from use of the workstation?

If yes, an ergonomic evaluation should be requested. Below are examples of some possible questions to use in discussing workstations with workers:

- Are the worker's feet flat on the floor or supported by a footrest?
- Are workstations adjustable and arranged to minimize excessive twisting, bending, reaching and pulling?
- Do workers take rest breaks at regular intervals as appropriate to the intensity of the tasks?
- Does the location of the keyboard allow the worker's forearms to be parallel to the floor (i.e., at right angles to the spine), and the wrists straight, in line with the forearm?
- Have position adjustments wrist rest and/or mouse pad rest been considered if the worker's wrists are resting on a hard or sharp surface?
- Is adequate space available for workstation hardware (e.g., VDT monitor, keyboard, mouse/trackball, document holder, wrist rest)?

- Is adequate space available under the work surface/table so that the legs, knees and thighs do not rub or hit the work surface, or items stored underneath?
- Is the chair adjustable and does it provide proper lower back support?
- Is the VDT monitor positioned to avoid glare (e.g. from overhead lights or window light)?
- To minimize neck and shoulder strain, is the top of the VDT display screen at or slightly below the worker's eye level; and is the VDT monitor located directly in front of and 18-24 inches from the worker?

OPERATING AREA (EXPERIMENT AND SHOP)
SELF-ASSESSMENT CHECKLIST
OPTIONAL

_____

AIR PERMITS

If an operation, process, or equipment emits either nonradiological substances (toxic or organic) or radionuclides into the air, or if any of the following has changed in the past year or is expected to change in coming year:
1) source location,
2) total hours of operation,
3) type of material processed,
4) quantity of material processed annually,
5) addition of an air emissions abatement device,
has EH&S been notified to determine regulatory compliance requirements?

_____

CHEMICAL LABELING AND STORAGE

Are all chemical containers labeled as to their contents and hazard?

_____

Are chemicals stored in approved containers with, if necessary, secondary containment? Are containers with flammable or toxic chemicals tightly closed and covered when not in use?

_____

Are incompatible chemicals stored separately?

_____

CHEMICAL SAFETY

Are overhead chemical storage units equipped with seismic guards (such as toe boards, bungee cords, or shelf lips)?

_____

CHEMICAL SPILL RESPONSE

Are spill kits readily accessible?

_____

Are hazardous liquids such as solvents stored and dispensed where they cannot accidentally spill into drains (floor or sink)?

_____

COMPRESSED GAS CYLINDERS -- STORAGE AND HANDLING

Are compressed gas cylinders stored in areas, which are:
1) protected from heat sources such as flame impingement, intense radiant heat, electric arcs, or high temperature lines;
2) away from stairs, elevators, and gangways; and
3) protected from cryogenic spills (by platforms or barriers)?

_____

Are cylinders legibly marked to clearly identify the type of gas contained?

_____

Are cylinders stored away from stairs, elevators, and gangways in a vertical, valve-end up position to prevent them creating a hazard by tipping, falling, or rolling. Are they secured with at least 2 chains or other devices fastened to a wall rack or other substantial structure?

_____

Do compressed gas cylinders have appropriate pressure relief devices?

_____

Are fuel-gas cylinders placed with valve end up whenever in use; and liquefied gases stored with the valve end up?

_____

EMERGENCY EQUIPMENT

Are eye wash fountains and safety showers provided in areas where corrosive chemicals are handled?

_____

Are eye wash fountains and safety showers readily accessible clearly marked, properly maintained, and inspected and tagged?

_____

EMERGENCY PREPAREDNESS

Are shut-off valves marked and easily accessible? Are tools readily available to turn off natural gas shut-off valves?

_____

LOCKOUT/TAGOUT PROCEDURES

Are lockout tags affixed properly to all defective equipment not otherwise secured against use?

_____
_____

PERSONAL PROTECTIVE EQUIP/CLOTHING

Are approved safety glasses, with side shields, required to be worn at all times in areas where there is a risk of eye injury?

_____
_____

Are protective gloves, aprons, shields or other means provided against cuts, corrosive liquids and chemicals?

_____
_____

Is personal protective equipment easily accessible, maintained in a sanitary condition, ready for use, and stored in an orderly manner?

_____
_____

Is appropriate foot protection required where there is risk of foot injuries from hot, corrosive, poisonous substances, falling objects, crushing or penetrating actions?

_____
_____

SEISMIC AND GENERAL WORK ENVIRONMENT

Is equipment capable of causing hazard if knocked over properly secured? Are wheeled equipment or carts provided with wheel-locks or other method to secure against rolling away?

_____
_____

EXPERIMENTAL SAFETY ONLY

RADIATION PROTECTION

Are all furniture and/or equipment items (including gas cylinders) going from designated Radiological Material Areas to reclamation (salvage) surveyed for radiation and tagged "RELEASE" by EH&S?

_____

SHOPS ONLY

_____

ABRASIVE WHEEL EQUIPMENT -- GRINDERS

Are machines designed for a fixed location securely anchored to prevent movement, or designed in such a manner that in normal operation they will not move?

_____

Do abrasive wheel safety guards cover the spindle end, nut, and flange projections?

_____

Is an adjustable work rest of rigid construction used to support the work of offhand grinding machines? Is the work rest kept adjusted closely to the wheel with a maximum clearance of 1/8 inch?

_____

Is the adjustable tongue or end of the peripheral member at the top of the housing used and kept adjusted to within 1/4" of the wheel?

_____

COMPRESSORS AND COMPRESSED AIR

Are employees prohibited from using compressed air at greater than 30 psi for cleaning purposes?

_____

Are safety glasses required in areas where air guns or nozzles are used?

_____

When using compressed air for cleaning, do employees wear personal protective equipment and ensure that chip guarding is in place?

_____

ELECTRICAL

Is restart protection provided in the control device of motors driving machines or equipment which could cause probable injury from inadvertent starting after a power loss?

_____

HAND TOOLS AND EQUIPMENT

Are all tools and equipment (company, lab, or employee-owned) used by employees at their work place in good condition? Are portable electrical tools and equipment grounded or of the double insulated type or provided with barriers or shields? Are electrical appliances such as vacuum cleaners, polishers, vending machines, etc., grounded?

_____
_____

IDENTIFICATION OF PIPING SYSTEMS

Is tubing or piping material appropriate for the type of material it contains, e.g., no copper for acetylene gas?

_____

LEAD EXPOSURE

If lead-containing materials are melted (via soldering, casting, etc.) during work procedures, has the Industrial Hygiene Group evaluated the airborne lead levels?

_____

MACHINE GUARDING AND SAFETY

Are all emergency stop buttons colored red?

_____

Are all pulleys, belts, gears, shafts, and moving parts that are within 7 feet of the floor or working level properly guarded?

_____

Are machine guards secured and arranged so that they do not offer an accident hazard in themselves?

_____

Are power and operating control switches within easy reach of the operator while at the regular work position (no need to reach over cutter to make adjustments)?

_____

Are splash guards mounted on machines that use coolant to prevent the coolant from reaching employees?

_____

Are switches, including foot-operated switches, guarded or arranged to prevent accidental actuation by personnel or falling objects?

_____

Do arbors and mandrels have firm and secure bearings and are they free from play?

_____

Does machine guarding (e.g. barrier guards, two-hand tripping devices, electronic safety devices, etc.) protect employees in the machine area from hazards created by the point of operation, ingoing nip points, rotating parts, flying chips, and sparks?

_____

Is sufficient clearance provided around and between machines to allow for safe operations, set up and servicing, material handling and waste removal?

_____

On each machine operated by electric motors, is there a positive means to render the controls or devices inoperative (e.g. lockout power) for maintenance, repair, or security?

_____

PERSONAL PROTECTIVE EQUIP/CLOTHING

Are disposable dust masks being used only for nuisance dust materials? Is use of disposable dust masks evaluated by the Industrial Hygiene Group (to determine if masks provide sufficient protection)?

_____

PORTABLE (POWER-OPERATED) TOOLS AND EQUIPMENT

Are circular saw guards checked to assure they are not wedged up, thus leaving the lower portion of the blade unguarded?

_____

Are grinders, saws, and other power tools provided with appropriate safety guards?

_____

SOLVENT-BASED CLEANING OPERATIONS

Is solvent (including waste solvent) stored or disposed of in a manner that will avoid evaporation (i.e., sealed containers) into the air? Is the solvent-based cleaning system cover in place, except when processing work or performing maintenance?

_____

WELDING, CUTTING, AND BRAZING

Are cables inspected for wear and damage, and exposed bare conductors replaced when needed?

_____

Are employees exposed to the hazards created by welding, cutting, or brazing operations protected with personal protective equipment and clothing? Is it required that eye protection, hand shields and goggles meet appropriate standards?

_____

Are only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) used? Are oxygen-acetylene systems equipped with the proper check valves and flashback protectors?

_____
_____

Is red used to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose?

_____
_____

Is suitable (i.e., dry chemical) fire extinguishing equipment available for immediate use?

_____
_____

When arc welding is to be suspended for any substantial period of time, such as during lunch or over night, are all electrodes removed from the holders and the holders carefully located so that accidental contact cannot occur, and is the machine disconnected from the power source?

_____
_____

When the object to be welded cannot be moved and fire hazards cannot be removed, are shields used to confine heat, sparks, and slag?

HOIST/CRANE/FORKLIFT SELF-ASSESSMENT CHECKLIST
OPTIONAL

_____

HOISTS/CRANES AND SECONDARY EQUIPMENT

Are lifting cables labeled?

_____

Are the controls of hoist plainly marked to indicate the direction of travel or motion?

_____

Are the Daily Inspection Tags for Hoist/Crane and Secondary Lifting Equipment completely filled out for each day of operation?

_____

Is each pendant cable tagged with an LBNL "Warning to Avoid Injury" tag?

_____

Is there an LBNL Proof Load Tag on the Hoist? Does the load limit on the tag match the marking on the hoist? Is the rated load of each hoist legibly marked and visible to the operator?

_____

INDUSTRIAL TRUCKS (FORKLIFTS)

Are daily inspections of tires, lights, battery, fuel, steering, hydraulics, forks, brakes conducted?

_____

Are forklift trucks tagged for maintenance when there is a malfunction?

_____

Are keys removed from the ignition when the lift truck is unattended?

_____

Are load capacities and centers of gravity (24" from mast) observed?

_____

Are the brakes on each industrial truck capable of bringing the vehicle to a complete and safe stop at any time?

_____

Does each industrial truck have a warning horn or other device which can be clearly heard above the normal noise in the areas where operated?

_____

Is the speed limit for industrial trucks appropriate for load and road conditions?

_____

When ascending or descending a grade 10% or more, are loads carried/transported upgrade?

_____

When forklift trucks are left unattended, are the forks lowered, controls neutralized, hand brake set, and wheels chocked if on a ramp or incline?

_____
_____

Will the industrial truck's parking brake effectively prevent the vehicle from moving when unattended?

_____
_____

MATERIAL HANDLING

When hoisting material or equipment, are provisions made to assure that no one will be passing under the suspended loads?

_____
_____

PERSONAL PROTECTIVE EQUIP/CLOTHING

Are hard hats provided and worn where danger of falling objects exists? Are hard hats inspected periodically for damage to the shell and suspension system?

SECTION 5. QUALITY ASSURANCE and QUALITY IMPROVEMENT

LBNL Requirements

It is LBNL's policy to conduct activities in accordance with sound quality assurance and conduct of operations principles. The basic implementing elements and guidelines of LBNL's QA system are found in Section 8 of the Regulations and Procedures Manual. The Office of Assessment and Assurance (OAA) is tasked with maintaining and improving the quality of laboratory activities. In order to accomplish this, they developed the lab's Operating and Assurance Program Plan (OAP), which can be found on the web at: **http://www.lbl.gov/Workplace/OAP/**.

The OAP was written to incorporate both Conduct of Operations and QA requirements. The Work Smart Standards set approved for Berkeley Lab does not include all the Conduct of Operations requirements. The OAP is being revised to reduce the COO requirements and incorporate new documentation requirements for radiation protection. (The revised OAP is expected to be available approximately March 2000.)

Each Program or Project has the opportunity to devise it's own methods of addressing the basic documentation requirements described in the OAP. Many of the requirements are already met by LBNL or General Sciences documents. Programs and Projects only need to develop documentation for procedures that are unique to their operations. Documents may be kept in Program/Project files, control rooms, desktop notebooks, or electronically. Facility and Function Notebooks are not required. The Program or Project QA Representative should maintain records of what the essential documents are and where they are kept.

AFRD's QA Efforts

AFRD's QA needs are changing. We are becoming involved in more large projects that require collaboration with other laboratories. LBNL is developing an integrated project management system. The AFRD QA Operations Committee is working on the development of a model QA system that will address project management issues and can be adapted to meet Program and Project needs. The committee envisions a graded approach that can be used to determine the documentation needed for different types of projects. A flowchart system would guide managers in developing applicable documents.

The first step is to inventory the QA documents we already have and determine which might be useful as model documents. The committee is also working to identify opportunities for improving our QA system. QUEST teams are encouraged to provide input to the committee. The Quality Assurance Comments form on the next page can be used as a discussion tool to collect and provide information to the committee.

QUALITY ASSURANCE COMMENTS

Subject	Model Documents or Systems	Needs or Concerns
Computer code documentation		
Travelers		
Procedures		
Engineering Notes		
QA Websites		
Access to critical information		

Submitted by:_____ Date:_____